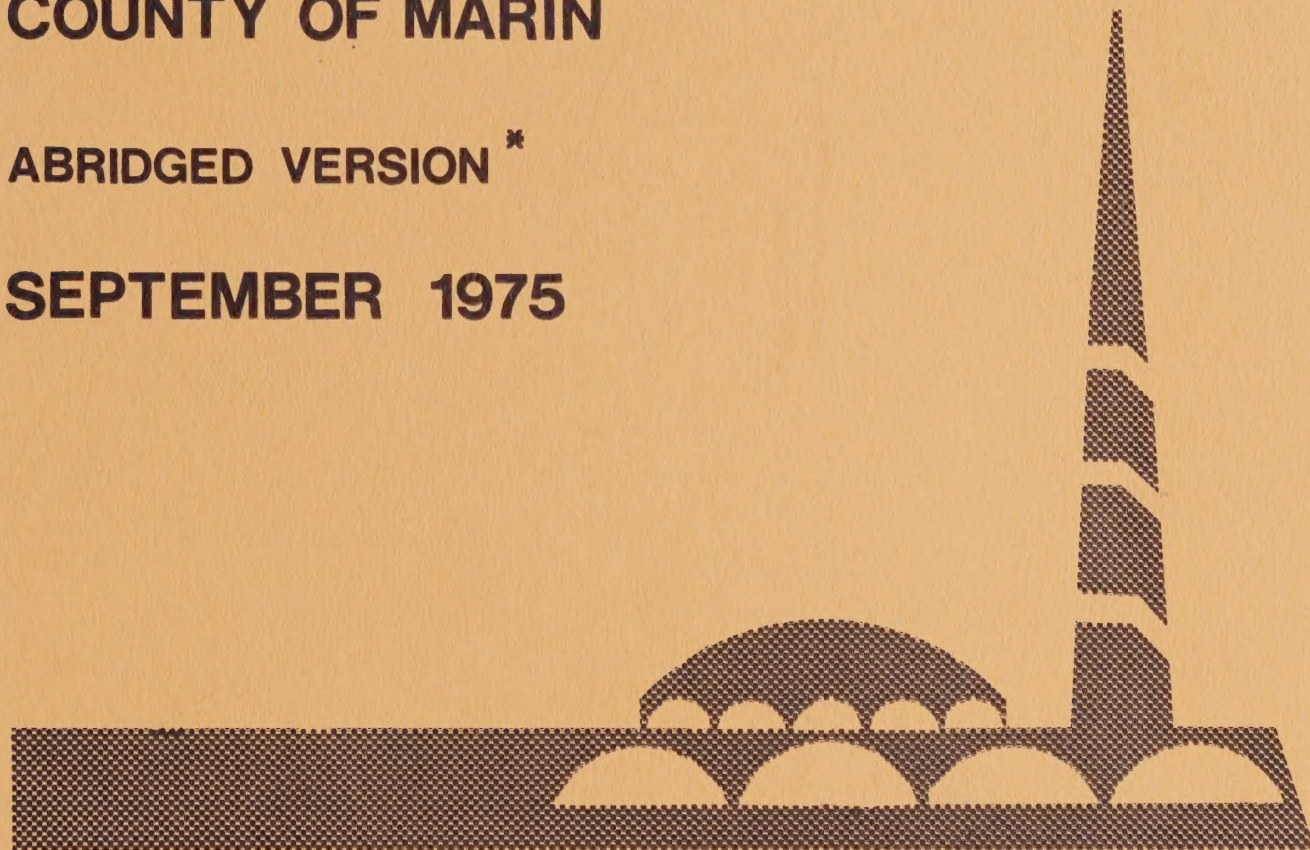


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**SOLID WASTE GENERAL PLAN
COUNTY OF MARIN**

ABRIDGED VERSION *

SEPTEMBER 1975



*** CHAPTER 10 OF THE SOLID WASTE GENERAL PLAN, STUDY AND REPORT**

**INSTITUTE OF GOVERNMENTAL
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SOLID WASTE GENERAL PLAN

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CHAPTER 10 - SOLID WASTE GENERAL PLAN (ABRIDGED VERSION)

10.1 INTRODUCTION

10.1.1 PURPOSE

The purpose of the County of Marin Solid Waste General Plan is to insure the benefits of short-, medium-, and long-term solid waste management planning to County citizens and to fulfill the statutory requirements of California Senate Bill No. 5, 1972 (Section 66780, California Government Code).

10.1.2 SCOPE

The Solid Waste Plan provides for the storage, collection, transportation, transfer, processing, and disposal of all solid waste generated in the County of Marin.

10.1.3 DEFINITIONS

The definition of any term not listed herein shall be the definition contained in the Minimum State Standards for Solid Waste Management, adopted January 1, 1975 by the State Solid Waste Management Board.

- Solid waste. "Solid waste" means all putrescible and non-putrescible solid and semisolid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, manure, vegetable or animal solid and semisolid wastes, and other discarded solid and semisolid wastes.
- Recycled material or recyclables. "Recycled material" or "recyclables" are solid wastes which are salvageable or capable of being salvaged when properly segregated from other wastes.
- Solid waste management. "Solid waste management" means a planning program of effectively controlling the generation,

storage, collection, transportation, processing and reuse, conversion or disposal of solid wastes in a safe, sanitary, aesthetically acceptable, environmentally sound and economical manner. It includes all administrative, financial, environmental, legal and planning functions as well as the operational aspects of solid waste handling, disposal and resource recovery systems necessary to achieve established objectives.

- Storage. "Storage" means the retention of solid waste on private or public property prior to its removal from the premises.
- Collection. "Collection" means the pickup and removal of solid waste from private or public property by an authorized agent of the cities or County, generally in a vehicle specifically designed for that purpose, and its conveyance.
- Transfer. "Transfer" means the removal of solid waste from the collection vehicle and depositing it in a more efficient hauling vehicle for conveyance to its place of disposal or processing; performed at a "transfer station".
- Transfer haul. "Transfer haul" means transport of transferred solid waste from the transfer station to the place of disposal or processing.
- Processing. "Processing" means the reduction, separation, recovery, conversion, or recycling of solid waste.
- Disposal. "Disposal" means the final deposition of solid wastes onto land, into the atmosphere, or into a permanent body of water.
- Operating facilities. "Operating facilities" or "facilities" means places for transfer or disposal of solid waste, including improvements thereon; with respect to the collection system, a "disposal point".
- Board. "Board" means the State Solid Waste Management Board of the State of California.
- Plan. "Plan" or "Solid Waste Plan" means the County's official Solid Waste Management Plan.
- Short-term. "Short-term" means through the year 1980.
- Medium-term. "Medium-term" means through the year 1990.

- Long-term. "Long-term" means through the year 2000.*
- Industry or private industry. "Industry", "private industry", or "private sector" means private firms or organizations engaged in the business of solid waste collection, processing, or disposal.
- Private collection firm. "Private collection firm" or "collector" is a company engaged primarily in collection only of solid wastes.
- Committee. "Committee" refers to the County Solid Waste Management Committee.

10.1.4 OBJECTIVES

The ordering of the objectives for the Solid Waste Plan listed below do not reflect any judgements on their importance or priority. The sequence in which they are shown is approximately chronological in terms of when each objective became widely discussed in the literature of Public Health, Environmental Engineering, other related disciplines, and the mass media.

- Sanitation and public health. To protect the public health, safety, and well being of the citizens of the County of Marin with regard to solid waste and to prevent the creation of nuisances and occupational hazards.
- Environmental protection. To provide for the protection of the unique natural environment of the County through planned solid waste management practices.
- Conservation of resources and energy. To conserve natural resources and energy not only within the geographical limits of the County, but within the radius of the economic influence of the citizens, businesses, and industry of the County and/or specifically, to minimize the use of land for ultimate disposal of wastes insofar as is technically or financially feasible.
- Portion of General Plan. To be the solid waste element of the Marin County-Wide Plan and to be the framework of solid waste

* Data and projections are valid for planning through the fiscal year 1994-95. From 1996 through 2000 will be a transitional period of re-directive planning.

management decisions by the County, cities, and other jurisdictions and organizations through the year 2000.

- Planning continuity. To secure continuity of planning beyond the initial planning period and to provide for feedback into an ongoing planning activity.
- Participation. To insure opportunities for participation of government, private industry, and other interested organizations, as well as the general public in implementation of the Plan, and especially in programs of source reduction and/or resource recovery which fulfill the objectives of the Plan.
- Flexibility. To insure the orderly development of solid waste management systems, and that there are consistent good practices throughout the County with flexibility to adapt to improved technology or changing goals.
- Financing. To relate the County's need for solid waste management to its ability to pay for such services, and to establish a method of financing planned programs which is well within the County's resources to support them.
- Compact between governments. To instill a spirit of coordination and cooperation among governmental jurisdiction and agencies, private enterprise, and other interested organizations, (both within and outside Marin County) and wherever possible, to encourage the establishment of more uniform policies, standards, collection rates, etc., among these jurisdictions, agencies, or organizations.

10.2 GENERAL RESPONSIBILITY AND ADMINISTRATION

10.2.1 PARTICIPATING GOVERNMENTS

- Direct participants. The governments participating directly in the Solid Waste Plan will be the:
 - 1) County of Marin
 - 2) City of Belvedere
 - 3) Town of Corte Madera
 - 4) Town of Fairfax
 - 5) City of Larkspur
 - 6) City of Mill Valley
 - 7) City of Novato
 - 8) Town of Ross

Participating governments, continued:

- 9) City of San Anselmo
 - 10) City of San Rafael
 - 11) City of Sausalito
 - 12) City of Tiburon
- Cooperating Districts. Those districts with solid waste jurisdiction cooperating with the cities and County in planning are:
 - 1) Almonte Sanitary District
 - 2) Alto Sanitary District
 - 3) Bolinas Community Public Utility District
 - 4) Homestead Valley Sanitary District
 - 5) Las Gallinas Valley Sanitary District
 - 6) Marin City Community Service District
 - 7) Sanitary District No. 6 (Novato)
 - 8) Stinson Beach County Water District
 - 9) Strawberry Recreation District
 - 10) Tamalpais Community Services District
 - Responsibility. Each of the participating governments, within the sphere of its operations as described in the following paragraphs, will assume responsibility for:
 - 1) Policy making
 - 2) Public information
 - 3) Budgeting
 - 4) Planning
 - 5) Adoption and enforcement of ordinances and standards
 - 6) Management and operation of the system
- Such responsibility will be exercised consistent with the Plan requirements of the Board.
- Exclusivity. None of the participating governments will create, or allow to be created in the County of Marin, except as provided in the Plan, public or private systems or facilities offering public service for:
 - 1) Collection
 - 2) Transfer
 - 3) Transfer haul
 - 4) Processing
 - 5) Disposal

10.2.2 DISPOSAL

It is the policy of the Plan that disposal of solid waste in Marin County, including ownership and operation of disposal facilities, will be a function of private industry. Ultimate responsibility for solid waste disposal, however, will be assumed by the County.

The extent of the exercise of County jurisdiction will be at the discretion of the County Board of Supervisors, and subject to County ordinances and the California Code. The County Staff and the Solid Waste Management Committee will monitor private industry disposal operations, as described below, in an advisory capacity to the Board of Supervisors.

10.2.3 TRANSFER AND TRANSFER HAUL

It is the policy of the Plan that transfer and transfer haul operations as required in Marin County, including ownership and operation of facilities, will be a function of private industry. Ultimate responsibility for solid waste transfer and transfer haul, however, insofar as it affects collection and disposal rates and service, rests with the participating governments and cooperating districts. The County Staff and the Solid Waste Management Committee will monitor transfer and transfer haul operations, or the need for same, in an advisory capacity to the County Board of Supervisors. At the discretion of the Board of Supervisors, acting for and in consultation with participating governments and cooperating districts, and subject to County Ordinances and the California Code, the County will fill any gaps in the solid waste transfer haul network where there is a proven economic or service justification.

10.2.4 STORAGE AND COLLECTION

- Industry. It is a general policy of the Plan that private industry will operate services for collection of solid waste and recyclables, including conveyance to a disposal point, through franchises granted by local jurisdictions. Nothing in the following paragraphs, however, is to be construed as denying responsible jurisdictions the option of the use of a municipally operated system for future collection service.
- Cities. Incorporated cities or towns participating in the Plan will be responsible for storage and collection of solid wastes and recyclable materials within their respective jurisdictions, except for the City of Novato (see below).

It is the intent of the Plan that actual operation will continue to be by franchised collector(s) and will be in accordance with applicable local ordinances and California codes.

- City of Novato. Storage and collection of solid waste in the City of Novato will be the responsibility of Sanitary District No. 6, subject to local option of transferring this responsibility to the City of Novato.

- Districts. Cooperating districts in the unincorporated areas of the County will be responsible for storage and collection of solid wastes and recyclable materials within their respective jurisdictions. It is the intent of the Plan that actual operation will continue to be by franchised collectors, except for the Tamalpais Community Service District (see below).
- Tamalpais Valley. The Tamalpais Community Service District will be responsible for storage and collection of solid wastes and recyclable material within its jurisdiction. It is anticipated that actual operation will continue to be by District employees and will be in accordance with applicable local ordinances and California codes.
- County. The County of Marin will assume responsibility for storage and collection of solid waste and recyclable materials in the unincorporated areas of the Counties which are outside the jurisdiction of the aforementioned special districts. The actual operation will be by franchised collector(s) and will be in accordance with applicable County ordinances and California codes. The County of Marin will further assume responsibility for storage and collection of solid waste and recyclable materials in any areas presently served by districts which, subject to applicable County ordinances and laws of the State of California, and at the districts' option, formally petition the County Board of Supervisors to relinquish this responsibility.

10.2.5 RESOURCE RECOVERY PROCESSES

It is the policy of the Plan that facilities for resource recovery, including mechanical recycling, composting, steam or power generation, etc., will be a function of private industry. Ultimate responsibility for solid waste resource recovery, insofar as it affects the economy, environment, and general well-being of the citizens of Marin County, will be assumed by the County. The County Staff and the Solid Waste Management Committee will monitor resource recovery operations, or the need for same, in an advisory capacity to the County Board of Supervisors. At the discretion of the Board of Supervisors, and subject to County Ordinances and the California Code, the County will fill any gaps in the solid waste resource recovery system where there is a proven economic or environmental justification.

10.2.6 INCENTIVE PLAN

The administration of the Resource Recovery Incentive Plan (Subsection 10.3.6) will be by the County Solid Waste Manager (see Subsection 10.2.7).

10.2.7 GENERAL ADMINISTRATION

- County Solid Waste Manager. A staff position in County government will be assigned the responsibility of administering the County Solid Waste General Plan. The "County Solid Waste Manager", hereinafter called "Manager", will have the following duties:
 - 1) Generally monitor the Plan by routinely checking its progress toward implementation;
 - 2) Specifically monitor the private sector's performance in disposal resource recovery processing, transfer, and transfer haul operations, or the need for same, supplying technical expertise to the Solid Waste Management Committee in a staff capacity;
 - 3) Administer County franchises and contracts, if any, for collection and for operation of solid waste facilities;
 - 4) Administer Incentive Plan (described in Section 10.3.6);
 - 5) Be the technical advisor to the Solid Waste Management Committee and liaison between the Committee and other County departments, participating governments and cooperating districts, and the Solid Waste Management Board;
 - 6) Arrange agendas of Committee meetings;
 - 7) Monitor governmental purchasing in accordance with specifications for content of post-consumer waste materials (Subsection 10.3.2);
 - 8) Perform other tasks relating to solid waste management planning, research, and administration as deemed necessary and appropriate by the Committee or County departments (see Subsections 10.2.8 and 10.2.9).
- Solid Waste Management Committee. The current Solid Waste Management Committee will become a permanent operation.
 - 1) Functions. The Solid Waste Management Committee will monitor solid waste activities and function in an advisory capacity to the governments and organizations its members represent, included in its scope:

- Policies and standards for solid waste transfer, processing, and disposal operations throughout the County, including the possibility of County-wide uniformity in rates and standards of service (see Subsection 10.4.2).
- Monitoring performance of the private sector with regard to rates, service, and environmental quality, and including appropriate recommendations to participating governments on invoking their active or latent powers to remedy deficiencies.
- Recommendations regarding updating, revising, or expanding the Solid Waste Plan.
- Periodic review of feasible and desirable alternative administrative arrangements for solid waste management.
- Liaison by individual members between various organizations throughout the County on solid waste matters.
- Providing the basis for individual members to advise their respective appointing governments and organizations about solid waste concerns.
- Periodically reviewing city and / or County solid waste matters, including review of technology reports presented by the County Solid Waste Manager; monitoring and reporting litter conditions throughout County.
- Conduct a public information program on solid waste matters, consistent with the Plan, and in cooperation with the participating governments and organizations.
- Prepare annual budget estimates for public information program and Resource Recovery Incentive Plan.

2) Composition. The Committee will have the following membership:

- One member appointed by each participating government and cooperating district;
- One member, appointed by the Board of Supervisors, representing all private collection firms;
- One member, appointed by the Board of Supervisors, representing all private disposal firms;

- One member, appointed by the Board of Supervisors, representing all "Certified Recyclers" (as defined in Subsection 10.3.6);
- One member, appointed by the Board of Supervisors, representing environmental interests.
- Other members as deemed appropriate by the Board of Supervisors.

Members shall be appointed for terms of not less than one year and serve at the pleasure of the appointing governments or organizations. No member may represent more than one jurisdiction and / or organization. Furthermore, a representative of a government may not be affiliated in any manner with a firm or organization which is otherwise represented on the Committee.

- 3) Meetings. The Committee shall meet as often as necessary to conduct its business, but not less than six times per year.
- 4) Executive Committee. The Committee, at its discretion, will elect a five member Executive Committee to conduct regular business. The Executive Committee will meet not less than six times per year and, under these conditions, the Solid Waste Management Committee will meet not less than once per year. The same person will be chairman of both committees. The Executive Committee will be composed of representatives of the:
 - County,
 - Cities,
 - Cooperating districts,
 - Private collection and disposal firms, and
 - Certified recyclers and / or environmental interests.
- 5) Operation. The Committee shall prepare such other rules and bylaws as are necessary for its effective operation.

10.2.8 PLANNING

The County Solid Waste Manager, assisted by County staff, will monitor the Solid Waste Plan, and when requested by the Committee, propose appropriate revisions to the Plan for evaluation and consideration by the participating and cooperating governments.

10.2.9 RESEARCH

The County Solid Waste Manager, assisted by County staff, will monitor developments in solid waste technology. Periodic reports will be made to the Committee.

10.2.10 BUILDING PERMITS

The incorporated cities and the County of Marin, through their appropriate building permit systems, will insure that all buildings and facilities have made proper provisions for solid waste storage, handling, and pickup for collection prior to granting of building permits.

10.2.11 EDUCATION AND PUBLIC INFORMATION

Educational programs may be conducted by the Solid Waste Management Committee and/or by "Certified Recyclers" (Subsection 10.3.6).

10.3 WASTE QUANTITY REDUCTION

10.3.1 SOLID WASTE QUANTITIES AND GOALS

Goals. To fulfill the objectives in Subsection 10.1.4, as well as implement the policies of the State Solid Waste Management Board, goals for waste quantity reduction are presented in Table 10 - 1. To reach these goals, the Plan utilizes the following methods:

- 1) Educational programs to influence supplier practices and consumer buying habits.
- 2) Source separation of recyclable wastes.
- 3) Mechanical, chemical, or biological processing and resource recovery (assumed to begin operating in 1987).
- 4) Resource Recovery Incentive Plan.

TABLE 10-1 - GOALS FOR WASTE QUANTITY REDUCTION

<u>Goal / Method</u>	<u>Specific Objective</u>
• Reduced Consumption	• No increase current per capita waste multiplier of 1.143 tons / capita - year.
• Source Separation, Recycle Depots, Etc.	• Current recovery (1974): 3 percent of total solid waste ("reduced consumption quantities").
	• Short-term (1980) target: 6 percent of total solid waste ("reduced consumption quantities").
	• Medium-term (1986) target: 10 percent of total solid waste ("reduced consumption quantities").
	• Long-term (2000) target: 3 percent* of total solid waste ("reduced consumption quantities").
• Mechanical, Chemical, Biological Resource Recovery Plant	• Medium-term (1987) target: 70 percent of waste remaining after source separation, recycle depots, etc.
	• Long-term (2000) target: 80 percent of waste remaining after source separation, recycle depots, etc.

* It is anticipated that manual source separation and recycling will decline once mechanical resource recovery facilities are operating.

Quantities extrapolated. Current and past consumption and waste generation trends give waste quantities for Marin through the planning period as shown in Table 10-2. These quantities are the "base" for which other forecasts predicted on different growth assumptions can be made. Based on percentage goals of Table 10-1, forecasts of annual reduced consumption, source separation, recycling, and resource recovery plant tonnages are presented. For planning purposes, the quantities are based on the assumption that a resource recovery facility will commence having substantial impact in 1987. If this facility comes into effective operation in a different year, the tabulation will change accordingly. The figures are not immutable and should be reviewed and updated periodically by the Committee.

10.3.2 SUPPLIER PRACTICES AND CONSUMER BUYING HABITS

The participating governments will consider the following activities to be within the scope of the Plan and will encourage, support, or implement them as appropriate to the available legal and financial means in both the public and private sector:

- Reduction of consumption, particularly when it contributes to the solid waste stream or utilizes non-renewable resources, or which use large quantities of disposable packaging in relation to the amount of product.
- Proper maintenance of facilities and equipment for maximum life and utility.
- Expression of concern and support for appropriate State and Federal legislation which would:
 - 1) regulate container types contributing to the litter and solid waste problems of the County;
 - 2) increase the use of secondary materials and reduce the discrimination against them;
 - 3) encourage the manufacture and use of durable products in preference to immediately disposable products.
- (Local) governmental purchase of materials containing post-consumer wastes (in accordance with California Government Code, Sections 14784.1 to 14784.2 on recycled paper) and / or through specifications for other materials.

TABLE 10-2 - SOLID WASTE QUANTITIES IN MARIN COUNTY

Fiscal Year	Estimated "Base" Solid Waste Production (1,000 tons)			Goals For Waste Quantity Reduction (1,000 tons)			Net Residue For Disposal (1,000 tons)
	Household & Business Pickups	Litter, Recreation Waste, Street Sweep- ings, Group 3*	Total	Reduced Consumption	Source Separation, Recycle Depots, Etc.	Resource Recovery Plant	
1975-76	251.0	23.1	274.1	0.0	6.9		267.2
1976-77	262.6	23.8	286.4	6.5	9.6		270.3
1977-78	274.3	24.9	298.8	13.2	12.4		273.2
1978-79	286.3	25.1	311.4	20.0	15.1		276.3
1979-80	298.4	25.8	324.2	27.0	17.8		279.4
1980-81	309.4	26.5	335.9	34.2	20.3		281.4
1981-82	320.5	27.3	347.8	41.5	22.7		283.6
1982-83	331.8	27.9	359.7	48.8	25.1		285.8
1983-84	347.3	28.6	375.9	60.5	27.6		287.8
1984-85	358.7	29.3	388.0	68.0	30.0		290.0
1985-86	370.2	30.0	400.2	75.6	32.5		292.1
1986-87	381.9	30.7	412.6	83.4	31.0	208.7	89.5
1987-88	393.8	31.4	425.2	91.5	29.5	215.8	88.1
1988-89	405.9	32.1	438.0	99.7	28.0	223.0	87.3
1989-90	418.1	32.8	450.9	108.0	26.5	230.1	86.3
1990-91	430.5	33.6	464.1	116.7	25.0	237.3	85.1
1991-92	443.1	34.3	477.4	125.4	23.5	244.4	84.1
1992-93	455.9	35.0	490.9	134.3	22.0	251.6	83.0
1993-94	468.9	35.7	504.6	143.4	20.6	258.7	81.9
1994-95	482.0	36.4	518.4	152.7	19.1	265.9	80.7
1995-96	495.1	37.2	532.3	162.0	17.6	273.0	79.7
1996-97	508.5	37.9	546.4	171.5	16.1	280.2	78.6
1997-98	521.9	38.6	560.5	181.1	14.6	287.3	77.5
1998-99	535.4	39.3	574.7	190.7	13.1	294.4	76.5
1999-2000	548.9	40.1	589.0	200.4	11.6	301.6	75.4

* Exclusive of agricultural and auto bodies.

10.3.3 SOURCE SEPARATION OF RECYCLABLE WASTES

- Definition of recyclables. Participating governments and co-operating districts (Subsection 10.2.1) will revise the definition(s) of "solid waste", "rubbish", "refuse", "waste matter", etc., in their solid waste ordinances and / or franchise agreements so as to include a separate definition for "recyclable waste". Codes and franchises will stipulate "recyclable waste" to include specific commodities such as newspapers, metals, and glass, subject to local option.
- Waste ownership. Solid waste ordinances and / or franchises of participating governments will be clarified on ownership of solid waste set out for collection in accordance with the recent ruling of the California Attorney General. The substance of the ordinances and / or franchises will be that "possession" of solid wastes implies ownership thereof; possession of the solid wastes (including recyclables) is conveyed by the originator to the franchised collector as soon as the waste is placed in position for actual pickup. In the case of curb collection of recyclables, the relevant "position" would be at the curb. The intent of such provisions is to prevent unauthorized scavenging of valuable recyclable materials derived from household and commercial waste. These provisions will not apply to special wastes, nor to any large sources of non-domestic solid waste.
- Local options. Participating and cooperating governments and districts retain options for source separation and collection of recyclable wastes as recognized and defined by ordinances and franchises:

1) Source separation and separate pickup:

- Option (1-A): No source separation or separate pickup
- Option (1-B-1): Voluntary source separation with no monetary incentives; separate pickup
- Option (1-B-2): Voluntary source separation with monetary incentives; separate pickup
- Option (1-B-3): Mandatory source separation; separate pickup

2) Separate pickup by:

Option (2-A): Regular collector

Option (2-B): Separate franchise or contract

3) Recycle depots for individual haul:

Option (3-A): No recycle depots

Option (3-B): Recycle depot(s) operated and maintained by regular collector

Option (3-C): Recycle depot(s) operated and maintained by separate organization under franchise or contract

- Uniformity versus local option. A basic premise of the Plan is that the actual pickup and / or haul of separated recyclables will be at the discretion of each of the participating and co-operating governments and districts. An objective of the Plan is that levels of service and rates will be consistent throughout the County, tending towards uniformity when feasible. The Committee will serve as a forum for examining differences in these services and formulating recommendations for governmental action.
- Awarding of franchises for collection of recyclables. No more than two franchises will be awarded for collection of solid wastes within the jurisdiction of any city, district, or county zone (Option 2-B, above). Franchises shall be awarded and services and rates established in accordance with the California code and provisions of the Plan set forth in Section 10.4. Collections will be performed in compliance with applicable local ordinances and California codes.
- Home composting. Backyard composting of garbage and organic garden wastes derived from the premises will be encouraged. Revised ordinances of participating and cooperating governments and districts will demonstrate acceptance of this practice insofar as it conforms to city and County refuse accumulation ordinances and does not constitute a nuisance or health hazard.

10.3.4 RECYCLE CENTERS AND SERVICE ORGANIZATIONS

- Operation. Recycling centers operated by volunteer or private organizations will be recognized and encouraged in Marin County, provided they are operated in accordance with applicable laws and ordinances.
- Location. They may be on private premises, or on public property should any of the participating governments enter into an appropriate agreement. If the County of Marin acquires land for transfer stations and / or processing facilities in accordance with this Plan, provisions will be considered thereat for recycling centers.
- Income. Income from recycling centers will accrue to the operator and be used to defray expenses.
- Service organizations. County residents will be encouraged to give used clothing, household appliances, and furniture to service organizations (e.g., Goodwill, Salvation Army) for further use, in preference to discarding them directly into the waste stream.

10.3.5 MECHANICAL, CHEMICAL, OR BIOLOGICAL PROCESSING AND RESOURCE RECOVERY

- State of the art. It is a premise of the Plan that the state of the art for solid waste processing and reclamation at the Plan's inception is as follows:
 - 1) Technology now exists for shredding of refuse and magnetic separation of ferrous metals (i.e., machines are currently available commercially).
 - 2) Technology is emerging (i.e., pilot or initial production plants are currently operating) for air classification separation, "electronic" and heavy media separation of aluminum and other nonferrous metals, pyrolysis or "destructive distillation" of refuse, fiber reclamation of the light fraction of refuse (by air classification), and utilization of refuse as a fuel for direct energy conversion or heat recovery.

- 3) Technology is less well developed (i.e., only on a laboratory scale) for color sorting of glass, biological digestion of the organic fraction of refuse, and separation of materials by "magnetic liquids".
- Feasibility monitoring. The County staff and County Solid Waste Manager will conduct an on-going program of feasibility monitoring of mechanical processing and resource recovery technology in accordance with Subsection 10.2.9.
 - Apparent feasibility. At such time as it becomes the opinion of the County Solid Waste Manager that it may be technically and economically feasible to construct and operate a resource recovery processing plant, or elements thereof, the Manager will advise the Solid Waste Management Committee.
 - Feasibility study. If it is the opinion of the Solid Waste Management Committee that resource recovery may be warranted and that it is not being adequately performed by the private sector, the Committee will recommend to the County authorization of a detailed technical and financial feasibility study of a resource recovery plant to accurately determine the following:
 - 1) Technical feasibility for mechanical separation of significant amounts of recoverable resources.
 - 2) Markets or outlets for materials to be extracted from waste stream.
 - 3) Optimum size and capacity of plant.
 - 4) Cost of construction and operation of the resource recovery plant.
 - 5) Income to be derived from sale of recovered resources.
 - 6) Overall financial feasibility of mechanical resource recovery, taking into account: fixed costs; operating costs; disposal fee income; surcharge, if any, on disposal fee; other income.
 - 7) The Committee will be sensitive and responsive to the possibility of Marin County being a part of the "Bay - Delta" resource recovery program, or other appropriate regional, subregional, or inter-jurisdictional system.

10.3.6 RESOURCE RECOVERY INCENTIVE PLAN

- Certified Recycler. "Certified Recyclers" will be designated by the County of Marin in accordance with rules to be developed by the County Solid Waste Manager and approved by the Solid Waste Management Committee. Certification will recognize recycling organizations such as recycling centers, regular or contract refuse collectors, transfer stations, etc., which remove significant amounts of material from the waste stream, thus avoiding disposal or deferring it until after one or more additional productive uses of the material or object.
- Authorized recycled items. The Committee will prepare a list of commodities which are eligible under the Incentive Plan. The list will include materials which have a market as a secondary or other raw material. Initially, authorized items will include, but not necessarily be limited to, newspapers, ferrous metals, aluminum, and glass. The Committee will periodically update and revise the list of authorized items, subject to County approval.
- Administration. Upon receipt of acceptable proof that wastes have been recycled rather than going to a disposal facility, the County will pay to the Certified Recycler a sum of money equal to the tons of waste recycled times the incentive rate. The incentive rate will be established by the County Board of Supervisors and generally be equal or proportional to the current disposal rate in dollars per ton. Wastes must be shown to be destined for some useful purpose before again entering the waste stream in order to qualify as "recycled".

10.3.7 GENERAL POLICY

It shall be the general policy of the Plan to encourage methods of reduction of flows of solid wastes to disposal sites insofar as is technically and financially feasible. Source separation and mechanical recycling methods, however, may be at odds with one another if local option persists and these methods coexist. For the short-term, participating and cooperating governments will encourage actual physical recycling by any feasible means (Subsection 10.3.3). Beyond the short-term, voluntary recycle centers (Subsection 10.3.4) will be phased out in favor of other collection methods satisfactorily demonstrated to be more efficient. Mechanical processing and other processing is a medium- or long-term goal; however, no such operation will be encouraged or undertaken by the County without a feasibility study (see Subsection 10.3.5). The moderation of waste-generating consumption will remain a paramount concern of the participating governments throughout the planning period.

10.4 STORAGE AND COLLECTION

10.4.1 SERVICE AREAS

The service areas for solid waste collection within Marin County will be as follows and as detailed below:

- The limits of incorporation of each participating city, except that Sanitary District No. 6 assumes this responsibility within the city limits of Novato.
- Boundaries of the ten other districts having solid waste responsibility.
- Nine zones covering all other unincorporated areas of the County (as defined by Subsection 10.4.4).

Service areas will generally remain the same throughout the planning period, subject to minor adjustments as required (e.g., annexations, incorporations, etc.) and with the options that:

- District solid waste service areas may be absorbed by encompassing County zones.
- If a participating city or cooperating district annexes a County zone or portion thereof, the responsibility for the franchise serving that area will be assumed by that city or district, at its discretion.
- Sanitary District No. 6 solid waste functions may be transferred to the City of Novato.

Franchisor governments retain the right to operate collection service if satisfactory franchise agreements cannot be obtained.

10.4.2 STANDARDS OF STORAGE AND SERVICE

- Determination. The standards of storage and service for each collection system will be determined by its respective government and defined by ordinance or franchise agreement.
- Uniformity. The Solid Waste Management Committee will be utilized as a forum for comparing standards of storage and service and making recommendations tending towards County-wide uniformity.

- Basic standards. Except for unavoidable variations in franchise collection agreements, an effort will be made to adopt basic County-wide standards for storage and collection of solid waste, as suggested below. Any adopted County-wide standards will meet the state standards.
- 1) Collection service will be available in all service areas. Respective governments will enact or modify ordinances to require mandatory collection of all domestic and commercial putrescible solid wastes, except that in rural areas, such collection may be either mandatory or optional according to density criteria to be developed by the Committee. In either case, individual haul of small amounts of dry trash, yard and garden debris, or recyclable material to disposal sites, transfer stations, or recycling facilities will be allowed.
 - 2) In general, the owner or tenant of any dwelling unit or business is responsible for removal of solid waste from the premises. Minimum frequency of such removal, whether by collection service as required above or individual haul, shall be once per week for all putrescible solid waste; for recyclables (if applicable), the minimum frequency will be once per month.
 - 3) Except as provided in (5) below, container specification will be as follows:

Material:	Galvanized steel or, subject to local ordinances, rigid plastic with watertight lids and suitable for handling
Maximum size:	32 gallons
Maximum weight when full:	80 pounds
Minimum weight when empty:	14 pounds for steel
 - 4) Yard and garden wastes will be tied securely in bundles not exceeding four feet in length and 18 inches in diameter and not exceeding 80 pounds in weight.

- 5) Bin and container service will be provided to multiple family dwelling units and businesses in all service areas in standard, commercially available sizes. Minimum volumes and pickup frequencies will be equivalent to those specified in 2) and 3) above.
- 6) In general, containers (including bundled yard wastes) will be made accessible to collectors and located not more than 100 feet from road or curb. Service will be provided through unlocked yard gates, but not through house or garage doors. For collection of recyclable materials, containers will be placed at "curbside" for pickup. For collection of all other solid waste, "curbside" pickup will be an optional service available.
- 7) Respective governments will provide all service areas with ordinances prohibiting accumulation of trash, rubbish, and garbage.

10.4.3 COLLECTION SERVICE RATES

- Publicly operated systems. Rates for publicly operated systems will be determined by the respective councils or boards to cover: operating costs, including labor, payroll taxes, fringe benefits, and other payroll burden; fuels, lubricants, and tires; equipment and facilities amortization, lease, and rental; equipment and facilities maintenance and repair; insurance; other direct and indirect overhead; administration; and operating reserve. Municipal collection service rates will also cover disposal fees or cost of landfill operations.
- Franchised systems. Rates for franchised collection systems will be determined by bidding and negotiation between franchised collectors and service area governments in accordance with the California Code. They will necessarily cover operating costs as for the public systems plus: bonds; profits, including income taxes on profits; and disposal fees.

- Uniformity of service rates. The Solid Waste Management Committee will be utilized as a forum for comparing collection service rates and preparation of recommendations tending towards County-wide uniformity of rate versus service.
- Rate reevaluation. The rate structure for all service areas will be reevaluated on an annual basis by appropriate governments to see that:
 - 1) In the case of publicly operated systems, income is meeting expenses without undue deficits or surpluses;
 - 2) In the case of franchised systems, rates are adjusted in accordance with terms of the franchise agreements.

10.4.4 FRANCHISES

- Uniformity. The Solid Waste Management Committee will be utilized as a forum for comparing franchises and making recommendations tending towards County-wide uniformity, to include:
 - 1) Franchise bid documents.
 - 2) Services.
 - 3) General terms and conditions of franchises such as cleanliness, health and safety, equipment maintenance, performance guarantees and bonds, etc.
 - 4) Percent of gross receipts to be paid franchisor by franchisee as consideration for granting franchise; will be related to cost of administering franchise.
 - 5) Coincident starting and termination dates, with a uniform franchise period of five years or more, and consistent with planned shifts in disposal points, if any.
 - 6) Annual adjustment, if necessary, of service rates according to a common formula.
- Mandatory collection. The County, cities, and districts having franchised collection systems may insure compliance with mandatory collection ordinances through the following procedure:

- 1) Establish revolving funds for payment of delinquent accounts.
 - 2) After proper notification to the non-paying customer, the collector will request payment from the responsible government.
 - 3) After verification, the government will pay the collector and place a lien against the property owner in the amount of the delinquent payment plus a service charge or fine.
- County franchise zones. Franchise service areas similar to the following will be established at the discretion of the County:

Zone 1: Extension of existing County Franchise Area No. 1 to the area along State Highway 1 between Point Reyes Station and the Sonoma County boundary (Marshall, Tomales, and Dillon Beach would be principal communities added);

Zone 2: Area along State Highway 1 between Olema and Muir Beach, including Bolinas and Stinson Beach;

Zone 3: Unincorporated area between Sonoma County boundary and southern Novato City limits and bounded on the west by Novato sphere of influence.

Zone 4: Unincorporated pockets in the San Rafael area, including Lucas Valley, Marinwood, Santa Venetia, Ranchitos, Country Club, and unincorporated areas east of Larkspur;

Zone 5: Oak Manor;

Zone 6: Sleepy Hollow;

Zone 7: Kentfield and Greenbrae;

Zone 8: All unincorporated area south of Mill Valley and Corte Madera, including Paradise Cay, Strawberry, Alto, Almonte, Homestead Valley, and areas along Panoramic Highway;

Zone 9: Waldo, Marin City, and Forts Baker, Barry and Cronkhite.
 - County Franchises. The County of Marin will establish franchise(s) in the above zones if, in the judgement of the Committee, and at the discretion of the County, the quality of the refuse collection service warrants this action. Reasons for such a decision may include, but are not limited to, the following:

- 1) Excessive noise, litter, odor, and other similar nuisances or health hazards;
- 2) Missed pickups;
- 3) Poor mechanical condition of collection vehicles;
- 4) Excessive rates;
- 5) Presence of competition which results in uneconomical service.

The County may grant franchise(s) for collection of solid wastes in each of the zones not within the jurisdiction of a special district in accordance with provisions of the Plan. In granting these franchises, special consideration will be given to franchised collectors in contiguous cities or special districts or to collectors who are already operating in the area. Furthermore, the County will insure that rates and services under the franchise are comparable to those of contiguous jurisdictions.

- Special District Exception. Any special district located wholly or partially within the County franchise zones may optionally retain the responsibility for administering its own franchise. If a special district annexes a portion of a franchised County zone, the franchise may be assumed by the district at its discretion (see Subsection 10.4.1).

10.5 BASIC TRANSFER, PROCESSING, AND HAUL NETWORK

10.5.1 SYSTEM CONCEPT

The concept of the County transfer, haul, and disposal system, and the objective of the Plan is that:

- There will ultimately be three "disposal points" in the County: San Rafael or vicinity Transfer Station, a West Marin Landfill or Transfer Station in the vicinity of Point Reyes Station, and the Redwood Landfill.
- The West Contra Costa Landfill will continue to be utilized for as long as possible.
- Any mechanical, chemical, and/or biological solid waste reclamation facility(ies) will be located at or near the San Rafael Transfer Station and/or the Redwood Landfill.

10.5.2 SERVICE AREAS

Disposal points will serve franchised and other collection companies, governments, and the general public. Each disposal point will have a defined service area; however, use of any site will be at the discretion of the collectors.

- Redwood Landfill will serve the entire County for residue disposal, except for the limited utilization of the West Contra Costa County Site and West Marin site as described herein. The landfill will also function as the disposal point for the Novato and North County area. If a resource recovery plant becomes feasible at or near the landfill, it will then replace the landfill as the North County disposal point.
- San Rafael Transfer Station will serve the mid-County area from San Rafael west to Fairfax and south to Larkspur. Collectors serving areas south of Larkspur will have the option of using the station or direct haul to the West Contra Costa Landfill for a limited time (see below).
- West Marin Landfill or Transfer Station will serve West Marin from Stinson Beach to Dillon Beach and Tomales.
- West Contra Costa County Landfill will continue to serve Southern Marin from Corte Madera to Sausalito plus Tiburon Peninsula; when this site becomes unavailable, the area will be served by the San Rafael Transfer Station.
- The San Quentin Disposal Site will continue to serve the eastern portion of the County from north of San Rafael to Sausalito and Tiburon. When filled to capacity, such waste will be taken to the San Rafael Transfer Station, subject to the rules established for acceptance of wastes thereat.

10.5.3 GENERAL ADMINISTRATION AND OPERATION

It is anticipated that the County will not be directly involved in transfer, processing, haul, or disposal, but that the initiative of private industry will insure establishment, maintenance, and operation of requisite facilities.

The Solid Waste Management Committee will monitor performance of the private sector with regard to rates, service, and environmental quality. Inequities, inadequacies, or persistent poor performance

will be cause, after due consideration of available information, for the Committee to recommend that the appropriate participating government invoke currently active or latent powers to rectify such deficiencies.

- Participating Governments. The response of the affected participating governments(s) will be, at its discretion, to appropriately
 - 1) Provide supplementary operations;
 - 2) Institute, modify, or increase regulations regarding rates, service, and operations;
 - 3) Institute, modify, or terminate franchises;
 - 4) Take over existing operations through negotiation or condemnation procedures.

10.6 TRANSFER STATIONS AND TRANSFER HAUL OPERATIONS

The criteria for transfer stations detailed herein will conform to minimum California state standards.

10.6.1 IMPLEMENTATION

- Location. It is assumed that transfer stations will be provided in or near Point Reyes Station to replace the West Marin Landfill as a disposal point when it is closed, and in San Rafael. Specific location, however, is at the discretion of private industry.
- Schedule goal. It is a goal of the Plan to implement the West Marin transfer operation prior to and in time for closure of the West Marin Landfill, and the San Rafael Transfer Station in the short-term planning period (by 1980). Actual startup time, however, is at the discretion of private industry.
- Feasibility. It is a premise of the Plan that transfer stations in the selected locations will be economically feasible at the time of their implementation, and that their integration into the County solid waste system will be the best alternative for rates, service, and environmental quality. Prior to initiating detailed design of transfer stations, it is anticipated that the private operator will provide the County Solid Waste Manager the opportunity to review his prospectus or otherwise confirm the prevailing conditions relating to feasibility. The Manager will advise the Solid Waste Management Committee of his findings and the Committee, in turn, will recommend appropriate action, if any, to the County.

10.6.2 SERVICE

- Users. The transfer stations will serve the following users as disposal points:
 - 1) Regular governmental or franchise collectors.
 - 2) Contract collectors.
 - 3) Institutional, manufacturing, or business collectors.
 - 4) Private individuals.
- Acceptable materials. Rules for acceptance of materials, established by the private operator, will generally provide that:
 - 1) All Group 2 domestic and commercial wastes will be accepted.
 - 2) No Group 1 wastes will be accepted.
 - 3) Group 3 wastes and bulky items will be accepted in controlled amounts (Subsections 10.9.9, 10.9.10).
- Disposal fees. Fees will be published and indiscriminantly charged at each transfer station.
 - 1) A uniform disposal rate will be charged to vehicles larger than 3/4 ton based on estimated or measured net weight (gross less tare). A minimum service charge will be established.
 - 2) Specified rates per vehicle will be charged for passenger vehicles and station wagons, pickups, and trailers of 1/4 ton and 1/2 ton capacity.
- Hours. Transfer stations will generally be open at least eight hours on weekdays to accommodate regular collectors and on weekends to accommodate the public, as required.
- Recycling. It is anticipated that limited manual recycling facilities will be available at the transfer stations. Such facilities will be located in an area separate from the transfer operation. The recycling and transfer activity will be designed and operated so as not to interfere with one another and not constitute health and occupational hazards.

10.6.3 FACILITIES AND OPERATION

- Compliance with codes and ordinances. Construction and operation of transfer stations will be functional in character and subject to the codes and ordinances of the jurisdictions in which they are located. Transfer haul operations will also be subject to jurisdictions traversed in transit.

- Committee monitoring. The Solid Waste Management Committee will monitor, for the benefit of participating governments, proposed and established transfer and transfer haul operations with respect to their effect on rates, service, and environmental quality.

10.7 MECHANICAL, CHEMICAL, BIOLOGICAL RESOURCE RECOVERY

10.7.1 IMPLEMENTATION

- Location. It is assumed that mechanical, chemical, or biological resource recovery plants will be located near the production and transportation for solid wastes, namely San Rafael and Novato. Specific facilities and locations, however, are at the discretion of private industry.
- Schedule goal. It is a goal of the Plan to implement resource recovery facilities in the medium term planning period (1980 - 1990). Actual startup time, however, is at the discretion of private industry.
- Feasibility. It is a premise of the Plan that resource recovery facilities will be economically feasible at the time of their implementation, and that their development will be the best County alternative for rates, service, and environmental quality. Prior to initiating detailed design of such facilities it is anticipated that the private operator will provide the County Solid Waste Manager the opportunity to review the prospectus or otherwise confirm the prevailing conditions relating to feasibility. The Manager will advise the Solid Waste Management Committee of his findings and the Committee, in turn, will recommend appropriate action, if any, to the County.

10.7.2 FACILITIES AND OPERATION

- Compliance with codes and ordinances. Construction and operation of resource recovery facilities will be functional in character and subject to the codes and ordinances of the jurisdictions in which they are located.
- Committee monitoring. The Solid Waste Management Committee will monitor, for the benefit of participating governments, proposed and established resource recovery facilities with respect to their effects on rates, service, and environmental quality, as described above.

10.8 RESIDUE DISPOSAL

10.8.1 GENERAL POLICY

- Method. The anticipated method for final disposal of solid waste residues in Marin County throughout the planning period will be the sanitary landfill.

- Flexibility. Initially, virtually all County solid waste will be transported to sanitary landfills for disposal. As methods of recycling and reclamation become technically and economically feasible for various components of County wastes, however, only the residues from processing will require ultimate disposal in sanitary landfills. Flexibility to adapt from complete landfilling to intensive reclamation, or to various degrees in between these extremes, will be an integral part of the Plan and its implementation.
- Existing site utilization. Presently operating landfills within the County will be utilized to their ultimate planned capacity.
- Single disposal site. It is anticipated that final disposal in Marin County will ultimately take place at the Redwood Sanitary Landfill site, the others being closed or fully utilized as stated herein.
- Waste quantities. See Table 10 - 3 for solid waste quantities that will be used for system planning.
- State policy. Insofar as applicable, location, design, operation, maintenance, and ultimate reuse of facilities will be governed by the "State Policy for Solid Waste Management" and "State Standards for Solid Waste Management", to be promulgated by the State Solid Waste Management Board not later than January 1, 1975.

10.8.2 DISPOSITION OF LANDFILLS

- West Marin. If the environmental and operational problems of the West Marin Landfill outweigh any benefits from its continued operation, and the site is closed permanently, and no alternate site substituted, then the West Marin Transfer Station will be constructed. The owner/operator will then prepare a plan for closure of the site in cooperation with the County; this plan will consider the following:
 - 1) Removal of junk automobiles, auto parts, appliances, and other "salvaged" items;
 - 2) Sufficient earth cover to prevent odors, vector propagation, and other hazards, and to minimize rainfall infiltration;
 - 3) Improvement of drainage in the canyon and on the fill surface;
 - 4) Control of leachates from the fill.

TABLE 10-3 - ANTICIPATED WASTE FLOWS AT DISPOSAL POINTS⁽¹⁾ (in tons / year)

Fiscal Year	Redwood Landfill	West Contra Costa County Landfill	West Marin Landfill / or Transfer Station	San Rafael Transfer Station	San Quentin Disposal Site
1975-76	163,493	36,086	2,945	-	74,500
1976-77	170,151	37,502	3,040	-	78,700
1977-78	176,945	38,938	3,135	-	82,900
1978-79	183,873	40,394	3,231	-	87,100
1979-80	190,936	41,869	3,326	107,204	91,400
1980-81	197,336	42,988	3,421	110,451	95,600
1981-82	203,480	44,120	3,516	113,743	99,800
1982-83	210,446	45,265	3,611	117,078	104,000
1983-84	295,698	80,242	3,707	181,281	
1984-85	305,397	82,589	3,802	186,789	
1985-86	315,247	84,967	3,897	192,371	
1986-87	325,247	87,376	3,992	198,027	
1987-88	335,397	89,816	4,088	203,757	
1988-89	345,697	92,286	4,183	209,560	
1989-90	356,148	94,788	4,278	215,438	
1990-91	366,748	97,321	4,373	221,389	
1991-92	377,499	99,885	4,468	227,414	
1992-93	388,400	102,479	4,564	233,514	
1993-94	399,451	105,105	4,659	239,687	
1994-95	410,653	107,761	4,754	245,934	
1995-1996 to 1999-2000	Transitional redirection period during which continuation of trends is anticipated.				

CLOSURE

(1) Flows are based on "waste" anticipated conditions, i.e., present levels of recycling and "base" forecasts of Table 10-2.

- West Contra Costa. It is anticipated that the West Contra Costa County Landfill will continue to be used by southern Marin collectors for the duration of their contracts with the landfill owner/operator, or as long as otherwise possible. It is further anticipated that when the site becomes unavailable, an alternative disposal point will be provided by the owner/operator of the San Rafael Transfer Station.
- San Quentin. The San Quentin Disposal Site will continue to be used in accordance with state and local regulations until filled in about 10 years. To enhance its lifespan, the Solid Waste Management Committee will also investigate the feasibility of using the site for litter, street sweepings and/or Group 3 waste only as provided in Subsections 10.9.7 and 10.9.9.
- Redwood. If the Redwood Sanitary Landfill becomes the single County site for residue disposal, it is anticipated that it can accept for disposal all solid waste generated within Marin County throughout the planning period under "worst" conditions, i.e., no resource recovery and unavailability of the West Contra Costa site.
- Other sites. Because of the longevity of Redwood, acquisition of land for a new disposal site(s) is not anticipated during the planning period. The Solid Waste Management Committee will continue to monitor the progress of filling at Redwood and, if it appears that the site will be filled before the end of the planning period, take appropriate steps to secure a replacement if this is not done by private industry.

10.8.3 UTILIZATION OF THE REDWOOD SANITARY LANDFILL

- Regulations and permits. It is a premise of the Plan that the Redwood Landfill will receive discharge requirements from the Regional Water Quality Control Board, a permit from the U. S. Army Corps of Engineers to expand the fill southward into the 270 acre parcel, and other requisite local and state permits.
- Ownership. It is anticipated that the site will continue to be privately owned and operated by the current owner and operator (Smith Brothers) throughout the planning period. If the present or any succeeding private owner is unable to maintain the site in its current "highest and best use", i.e., a sanitary landfill serving all of Marin, the County will take appropriate action to secure the site for landfill purposes. Such action may include purchase of the property and equipment. In any event, the County will accept the following or similar offer from the owners of the site (formally presented to the County Solid Waste Management Committee on December 12, 1974):

"...The County will be given a formal written option, capable of being recorded, to lease the site for one year commencing the first day it ceases to be operated as a privately owned land fill dump (sic), with further option to purchase the site within or at the end of that year, at a rental and purchase price to be determined within ninety days after the County takes possession, by three qualified appraisers, one selected by the County and one by Smith Brothers, and the two thus selected to select a third, the costs of the appraisals to be borne one half by the County and one half by Smith Brothers."

- Provision for County operation. In the event that the County does purchase the site, the actual operation will be by a private contractor under contract to the County, or by the County if a satisfactory contractual agreement cannot be obtained. If by contract, the operating contractor will be selected by a solicitation and bidding procedure to be devised by the County in conformance with the California Code. Principal criteria for selection will be developed by the Solid Waste Management Committee and will include:
 - 1) Demonstrated technical and financial capability of the contractor to enter into a long term contract of ten years or more.
 - 2) Demonstrated experience in sanitary landfill operation.
- Improvements. It is anticipated that the operator will undertake the following improvements in order to meet requirements of State and Federal agencies:
 - 1) Levees built to at least elevation +9 M.S.L.;
 - 2) In conjunction with 1) above, install a bentonite core in areas where seepage has occurred or is likely to occur;
 - 3) Fill areas of subsidence such that a one percent grade results in order to eliminate ponding;
 - 4) Provisions for monitoring water quality in San Antonio Creek.
 - 5) Others as required by the site master plan (see below).
- Service. The Redwood Sanitary Landfill will service the following:
 - 1) Regular governmental or franchise collectors.
 - 2) Contract collectors.
 - 3) Institutional, manufacturing, or business collectors.
 - 4) Private individuals.

- Acceptable materials. Rules for acceptance of materials, established by the private operator, will generally provide that:
 - 1) All Group 2 and Group 3 domestic and commercial wastes will be accepted.
 - 2) No Group 1 wastes will be accepted.
- Disposal fees. Uniform percent of gross revenues will be charged franchised and governmental collectors for disposal, and all others will pay at published, nondiscriminatory rates, generally as follows:
 - 1) An equivalent uniform disposal rate for vehicles larger than 3/4 ton based on estimated or measured net weight (gross less tare). A minimum service charge will be established.
 - 2) Specified rates per vehicle will be charged for passenger vehicles and station wagons, pickups, and trailers of 1/4 ton and 1/2 ton capacity.
- Hours. The Redwood Site will generally be open at least eight hours on weekdays to accommodate regular collectors and on weekends to accommodate the public.
- Recycling. It is anticipated that limited manual recycling facilities will be available at the Redwood Sanitary Landfill. Such facilities will be located in an area separate from the disposal operations. The recycling and transfer operations will be designed and operated so as not to interfere with one another and not constitute health and occupational hazards.
- Landfill operation. Insofar as applicable, the site will be operated as a Class II - 2 landfill in accordance with forthcoming Regional Water Quality Control Board discharge requirements and State Solid Waste Management Board standards as stated herein (Subsection 10.8.1). Federal standards for sanitary landfill design and operation will be used for guidelines for applicable items not covered by the state policy and standards. Reference is made to the Federal Register, Volume 39, Number 158, Part III, Wednesday, August 14, 1974 and Sanitary Landfill Design and Operation, Report SW-65ts, United States Environmental Protection Agency, 1972. Operational details will be specified in the site master plan.
- Planning survey. The operator will conduct an annual (or more frequent) survey of the landfill area to determine rate of filling and disposal volume remaining.

- Master plan. It is anticipated that the operator will prepare a detailed master plan for operation, development, and ultimate use of Redwood Landfill.

1) Operation. The Plan will detail operational procedures for the site.

2) Development. It is anticipated that the general development of the site will be as follows:

- Complete first lift on south parcel while stockpiling sufficient cover material for second lift;
- Add a second lift on the central parcel;
- Add a second lift on the south parcel.

The extreme northerly 180 acres will be reserved for recreational open space. The remainder of the site appears to be able to receive all of Marin's wastes for the planning period.

Included in site development master plan will be any future improvements required by state and local regulations.

3) Ultimate use. Planned ultimate use of the site will consider surrounding land uses as well as the special hazards associated with development on artificial fills.

4) Cover material. Consider alternative sources of earth cover.

10.8.4 UTILIZATION OF OTHER SITES

- West Marin. If the West Marin Landfill continues to operate as provided in Subsection 10.8.2, it is anticipated that the owner/operator will be required by state agencies to make improvements and introduce operating procedures as follows:

1) Install subdrain and leach field at the toe of the fill to intercept leachates;

2) Investigate sources of additional cover material;

3) Install new diversion ditch (rock or concrete lined) to re-route existing stream;

4) Upgrade access road to all-weather surface;

- 5) Establish well and/or pond for fire control;
 - 6) Operate landfill with "cells" (see Subsection 10.8.1);
 - 7) Fill depressions in landfill surface and grade for drainage;
 - 8) Removal of junked autos and salvaged appliances to adjacent canyon or out of the area altogether.
 - 9) Conduct an annual survey to determine rate of filling and disposal volume remaining.
 - 10) Prepare a master plan for ultimate use, to be in conformance with the County General Plan.
- West Contra Costa. The West Contra Costa Landfill is not within the jurisdiction of Marin County or any jurisdictions therein.
 - San Quentin. If the San Quentin Disposal Site continues to operate as provided in Subsection 10.8.2 (or 10.9.7 and 10.9.9), it is anticipated that the following improvements will be made by the owner/operator:
 - 1) Any ponded water in working cell will be pumped into unused dike area and be allowed to evaporate;
 - 2) New sources of cover material will be obtained to bolster seasonal shortage;
 - 3) Master plan for ultimate use will be prepared to be in conformance with the General Plan of the City of San Rafael, as well as considering special hazards in development on artificial fills.

10.9 SPECIAL WASTES

10.9.1 QUANTITIES

Table 10 - 4 gives the estimated quantities of the various special wastes which will be generated in Marin County during the planning period.

10.9.2 ABANDONED VEHICLES

- Unincorporated areas. The County of Marin will continue to administer the Abandoned Vehicles Abatement (AVA) program under

TABLE 10 - 4 - SPECIAL WASTE QUANTITY PROJECTIONS⁽¹⁾

Term	Fiscal Year	Water Treatment Sludge		Group 3 Wastes (Tons)	Sewage Sludge (Tons)	Septic Tank Pumpings (Gallons)	Abandoned Vehicles No. of Vehicles	Agricultural Wastes (Tons)		Litter, Recreational Waste (Tons)	Street Sweepings (Tons)	Group 1 Wastes	
		Liquid (Gallons)	Solid (Tons)					Crops	Manure			Used Oil (Gallons)	Other (Gallons)
Short	1976	13,800	1,670	16,800	145,500	276,000	1,495	10,400	263,000	1,730	4,540	500,000	600
	1977	14,100	1,700	17,300	146,700	279,000	1,540	10,400	263,000	1,790	4,680	512,500	600
	1978	14,400	1,740	17,800	148,000	282,000	1,585	10,400	263,000	1,840	4,810	525,000	600
	1979	14,700	1,770	18,300	149,200	285,000	1,630	10,400	263,000	1,890	4,940	537,500	600
	1980	15,000	1,810	18,800	150,400	288,000	1,675	10,400	263,000	1,950	5,080	550,000	600
Medium	1981	15,300	1,840	19,300	151,600	291,000	1,720	10,400	263,000	2,010	5,210	562,500	600
	1982	15,600	1,880	19,800	152,800	294,000	1,765	10,400	263,000	2,070	5,450	575,000	600
	1983	15,900	1,920	20,300	154,000	297,000	1,810	10,400	263,000	2,130	5,480	587,500	600
	1984	16,200	1,960	20,800	155,200	300,000	1,855	10,400	263,000	2,200	5,610	600,000	600
	1985	16,500	2,000	21,300	156,400	303,000	1,900	10,400	263,000	2,260	5,750	612,500	600
	1986	16,900	2,040	21,800	157,600	306,000	1,945	10,400	263,000	2,330	5,880	625,000	600
	1987	17,200	2,080	22,300	158,800	309,000	1,990	10,400	263,000	2,400	6,020	637,500	600
	1988	17,600	2,120	22,800	160,000	312,000	2,035	10,400	263,000	2,470	6,150	650,000	600
	1989	17,900	2,160	23,300	161,200	315,000	2,080	10,400	263,000	2,550	6,280	662,500	600
	1990	18,300	2,200	23,800	162,400	318,000	2,125	10,400	263,000	2,620	6,420	675,000	600
Long	1991	18,600	2,250	24,300	163,600	321,000	2,170	10,400	263,000	2,700	6,550	687,500	600
	1992	19,000	2,290	24,800	164,800	324,000	2,215	10,400	263,000	2,780	6,690	700,000	600
	1993	19,400	2,340	25,300	166,100	327,000	2,260	10,400	263,000	2,860	6,820	712,500	600
	1994	19,800	2,390	25,800	167,300	330,000	2,305	10,400	263,000	2,950	6,950	725,000	600
	1995	20,200	2,430	26,300	168,500	333,000	2,350	10,400	263,000	3,040	7,090	737,500	600
	1996	20,600	2,480	26,800	169,700	336,000	2,395	10,400	263,000	3,130	7,220	750,000	600
	1997	21,000	2,530	27,300	170,900	339,000	2,240	10,400	263,000	3,220	7,360	762,500	600
	1998	21,400	2,580	27,800	172,100	342,000	2,485	10,400	263,000	3,320	7,490	775,000	600
	1999	21,800	2,640	28,300	173,300	345,000	2,530	10,400	263,000	3,420	7,620	787,500	600
	2000	22,300	2,680	28,800	174,500	348,000	2,580	10,400	263,000	3,520	7,760	800,000	600

(1) Based on the following data:

Item	Units	Current Quantity (Year)	Forecasted Quantity (Year)
Abandoned Vehicles	No. of Hulks/Year	1,315 (1972)	2,580 (2000)
Agricultural Wastes			
Crop residue	Tons/Year	10,400 (1972)	10,400 (2000)
Manure	Tons/Year	263,000 (1972)	263,000 (2000)
Sewage Sludge	Tons/Year	138,300 (1970)	174,500 (2000)
Water Treatment Sludge			
MMWD (Solid)	Tons/Year	1,600 (1974)	2,700 (2000)
MMWD (Liquid)	Gallons/Day	3,300 (1974)	5,500 (2000)
NMCWD (Liquid)	Gallons/Day	10,000 (1974)	16,700 (2000)
Septic Tank Pumpings	Gallons/Year	265,000 (1972)	318,000 (1990)
Litter, Recreational	Tons/Year	1,540 (1972)	3,520 (2000)
Street Sweepings	Tons/Year	4,140 (1973)	6,280 (1990)
Used Oil	Gallons/Year	450,000 (1972)	800,000 (2000)
Group 3	Tons/Year	14,800 (1972)	23,800 (1990)

the authority of County Ordinance 2061, and as described therein. The program will be continued in cooperation with, and under contract to the California Highway Patrol. County abatement procedures will be in compliance with Section 22660 of the California Vehicle Code. Actual vehicle removal will be by contractor or franchisee to the County, except that the County retains the right to perform such services if satisfactory contract or franchise arrangements cannot be obtained.

- Incorporated cities. City governments may also participate in the AVA program as described above. This would require city ordinances and contracts similar to those of the County. However, cities will retain the option of continuing to deal with abandoned vehicles under their own ordinances and utilizing police powers. Upon receipt of a complaint, and after due notice and hearing procedures, abandoned vehicles will be removed by contract and delivered to licensed dismantlers.

10.9.3 AGRICULTURAL WASTES

- Pesticide containers. See Subsection 10.9.8.
- Field crops and orchard prunings. Crop and orchard wastes may be plowed back into the soil or may be disposed of by burning subject to the rules and regulations of the San Francisco Bay Area Air Pollution Control District and State Division of Forestry. They will also be accepted at Class II disposal sites (i.e., the Redwood Landfill).
- Manure and water quality. The critical aspect of manure disposal is meeting water quality standards; for the short-term, this objective will be paramount. It is a premise of the Plan that each dairy in Marin County will provide adequate pollution control facilities or arrangements by the end of the short-term period, wholly or partially supported by the recently approved County subsidy program. The Solid Waste Management Committee will evaluate extension of the subsidy program.
- Manure disposal. Provided pertinent state and local regulations are met, the following will be acceptable ultimate disposal methods for manure:
 - 1) Landspreading. Landspreading of manure from dairies, chicken ranches, etc., will be encouraged as a means of disposal and pasture fertilization.

- 2) Spray irrigation. Manure slurried with rain or wash water and applied to the land surface with a sprinkler system will be an alternative system. Caution must be exercised in the rate of irrigation so as not to cause excessive runoff into streams, lakes, or estuaries, and so as not to cause excessive odors.
- 3) The future. For the medium-term and beyond, the Solid Waste Management Committee will consider the feasibility of alternatives such as utilization of manures for methane generation (on-site or in a central facility) and of optional pickup/haul service for surplus manures. The Committee will explore establishment and financing of pilot projects for alternative manure utilization and disposal systems.

10.9.4 SEWAGE SLUDGE

- Cooperating governments. It is a premise of the Plan that the following governments or agencies will continue responsibility for sludge handling and disposal, unless consolidated or merged into other governments or agencies, or unless treatment plant closures result in the use of another agency's facility.

Sanitary District No. 6

Hamilton Air Force Base

Las Gallinas Valley Sanitary District

San Rafael Sanitation District

San Quentin Prison

Sanitary District No. 1

City of Mill Valley

Sanitary District No. 5

Richardson Bay Sanitary District

Sausalito - Marin City Sanitation District

When sewers and treatment plants are constructed in Bolinas and Stinson Beach, the Bolinas Public Utility District and the Stinson Beach County Water District will be added to the above list. If sewers and treatment plants are built in other West Marin communities, the responsible governments or agencies will also be added to the above list.

- Methods of disposal. The following will be acceptable methods of disposal of sewage sludge, subject to pertinent local and state laws and regulations:
 - 1) Drying beds. Each treatment plant may continue to utilize its own drying beds and / or landfills until filled.
 - 2) Landfill or transfer. Dewatered sewage sludge, with a water content not exceeding 50 percent by weight, will be accepted at disposal sites, subject to waste discharge requirements set by the Regional Water Quality Control Board. It will also be accepted at transfer stations, subject to weight and frequency rules.
 - 3) Soil conditioner. Sludge may be sold or otherwise disposed of for use by other agencies, institutions, or the general public as a soil conditioner.
- Other uses. Cooperating governments may investigate the feasibility of other ways of sludge utilization and disposal; such efforts will be coordinated with resource recovery studies of the Solid Waste Management Committee.

10.9.5 SEPTIC TANK PUMPINGS

- Administration. The County of Marin will continue to administer and enforce its "Septic Tank Ordinance" (Chapters 18.04 and 18.06, Marin County Code). The County will also continue to license septic tank pumpers as provided for in pertinent laws.
- Facilities. Ponding at the Borello Ranch and treatment at any sewage treatment plant will continue to be acceptable methods of disposal of septic tank pumpings, subject to pertinent local and state laws and regulations. The owner / operator of the Borello Ranch will continue to monitor the site for water quality and submit reports pursuant to Regional Water Quality Control Board Order No. 73-33. When sewage treatment facilities are constructed in West Marin, provisions for handling septic tank pumpings will be made at those facilities.

10.9.6 WATER TREATMENT SLUDGE

- Currently involved governments. The North Marin County Water District (NMCWD) and the Marin Municipal Water District (MMWD) will continue to be responsible for handling and disposal of sludge from their respective treatment plants. However, nothing in this Plan shall be interpreted as precluding the merger or consolidation of these districts or formulation of new districts.

- Methods of disposal. The following will be acceptable methods of disposal of water treatment sludge, subject to pertinent local and state laws and regulations:
 - 1) Landfill. The MMWD may continue to use its landfill near the Kent Lake Dam. The MMWD should continue to monitor this and any other sites for potential environmental impacts and rate of filling. Dewatered sludge will also be accepted at disposal sites, subject to state and local regulations.
 - 2) Spray irrigation. Raw sludge may be sprayed on the land for irrigation, dust control, or other suitable purposes. Both NMCWD and MMWD will evaluate the environmental effects of such spraying. Spraying will not be done where an adverse environmental impact would result.
 - 3) Sewage treatment. Raw sludge may be accepted at any sewage treatment plant capable of receiving it. The NMCWD and Sanitary District No. 6 will continue their efforts to evaluate addition of water treatment sludge on the performance of the latter's plant.
 - 4) Other. Dewatered sludge may be sold to or otherwise utilized by any interested agency, institution, or person.
- Other uses. The NMCWD and MMWD may investigate the feasibility of other ways of sludge utilization and disposal. Such efforts should be coordinated with resource recovery studies of the Solid Waste Management Committee.

10.9.7 LITTER, RECREATIONAL WASTE, AND STREET SWEEPINGS

- City streets. Street sweeping programs will be operated by the respective city governments.
- County roads. The roadside cleanup program for County roads will be operated by the County.
- State highways. The roadside cleanup program for State highways will be operated by the State Department of Transportation.
- Beaches and parks. Litter cleanup programs will be operated by the United States Department of the Interior, National

Park Service, California State Department of Parks and Recreation, County of Marin, and respective city governments.

- **Illegal dumps.** The County of Marin and respective city governments will operate cleanup programs of illegal dumps on public or private property.
- **Level of service.** The litter cleanup program will be conducted so as to maintain litter control at the present or higher level, and to meet the requirements of the Board. Litter conditions will be monitored and reported by the Solid Waste Management Committee.
- **Disposal sites.** Litter, recreational waste, and street sweepings will be accepted at all disposal sites in the County and all transfer stations, in reasonable loads. Most will probably use the San Quentin site until filled in about 1984. After that, cities in southern Marin will be faced with a long haul or transfer to the Redwood Landfill. Before 1984, the Solid Waste Management Committee, in cooperation with the City of San Rafael and the operator of the San Quentin Disposal Site, will investigate the feasibility of restricting that site to accept only recreational waste and litter, street sweepings, and/or Group 3 materials (see also Subsection 10.9.9) before the aforementioned closing date.

10.9.8 TOXIC AND HAZARDOUS (GROUP 1) WASTES

- **Administration.** Other than used oil and pesticide containers, the only readily identifiable source of Group 1 wastes at present is Hamilton Air Force Base. It is anticipated that there will be no other significant toxic or hazardous waste generators in the planning period. Nevertheless, the County Solid Waste Manager should monitor the progress of industrial development in Marin County vis-a-vis the identification of possible Group 1 waste generation.
- **Pesticide containers.** Subjected to the "triple rinse" procedures as prescribed by Section 3141, California Administrative Code, pesticide containers will enter the waste stream as Group 2 waste, and hence will be acceptable at all County disposal sites or transfer stations. Container cleaning practices will be monitored by the County and by disposal site operators.

- Used oil. It is a premise of the Plan that used oil and other spent petroleum products will continue to be handled commercially by the industry, based on present storage and disposal practices, and hence will generally not enter the County waste stream. In the event commercial outlets are not available for used oil disposal, the following alternatives may be employed:
 - 1) Construction of special cells at the Redwood Landfill;
 - 2) Haul by licensed commercial waste haulers to a Class I disposal site in the Bay Area outside Marin County.
- Other Group 1 wastes. The small accumulation of Group 1 wastes will be hauled by a licensed liquid waste hauler to a Class I disposal site in the Bay Area (outside of Marin County), when there is enough volume for such a trip. Should these sites be unavailable, the County will take appropriate steps to see that a Class I cell is constructed at the Redwood Landfill or other appropriate location.

The above also applies to any Group 1 waste generated in Marin and specifically to the following:

- 1) Chemical toilet wastes, used by construction firms, utilities, governments, and other users of portable toilets;
 - 2) Hamilton Air Force Base, which is the source of small quantities of paint stripping and photochemical processing wastes (approximately 600 gallons per year).
- Substantial amounts. Upon identification of substantial amounts of Group 1 wastes generated within Marin County requiring disposal, and after source separation or recycling is determined by the Solid Waste Management Committee to be unfeasible, the County will take appropriate steps to obtain sufficient capacity in the Redwood Landfill or other suitable site.
 - Facilities. It is anticipated that all Group 1 wastes generated within Marin County will be transported to existing Class I sites in the Bay Area outside Marin County by liquid waste haulers licensed by the State Department of Public Health and Solid Waste Management Board. The current accumulations of such wastes are too small to justify a separate Class I facility. All of the existing disposal sites in Marin are Class II and cannot accept Group 1 waste. However, the low permeability of the "bay mud" at Redwood Landfill may allow construction of a special Class I cell at or near this site.

10.9.9 GROUP 3 WASTES

- Acceptability. The respective site operators will establish rules for the quantities of Group 3 wastes that will be accepted at transfer stations and disposal sites, substantially as follows:
 - 1) Disposal sites. Group 3 wastes will be accepted at all disposal sites except that repetitive and/or large loads from one or more sources which will fill a site in excess of its planned development rate may be redirected to another site, or the owner may be required to establish a private fill.
 - 2) Transfer stations. Group 3 wastes will be accepted at transfer stations except that large and/or repetitive loads from one or more source may be redirected to the disposal site.
- Private fill sites. Respective local governments will exercise control over private fill sites in accordance with applicable state and local laws and ordinances.
- Disposal fees. Fees for the disposal of Group 3 material will generally be in accordance with standard tonnage rates. This does not preclude the site operator procuring Group 3 materials for landfill cover in accordance with California code.
- Use of San Quentin site. The feasibility of San Quentin as a Class III disposal site will be investigated by the Solid Waste Management Committee, with the cooperation of the City of San Rafael and the site owner/operator, before its anticipated closing date of 1984 (see also Subsection 10.9.7).

10.9.10 OTHER SPECIAL WASTES

The system of solid waste collection, transfer, processing, and disposal described in the preceding sections is planned to accommodate various other subcategories of waste, the origin or physical characteristics of which may result in special handling or disposal practices. Some of these categories and their disposition under the Marin County Plan are as follows:

- Commercial. Commercial waste is included with household waste in quantity projections herein. Collection may be by regular

collection agencies or by the commercial establishments generating the waste. Transfer stations, processing facilities, and disposal sites are planned to handle the combined quantities.

- Institutional. Provision is made for the accommodation of wastes from schools, hospitals, etc., in the Plan along with that from household and commercial sources. Regular service will generally be provided by the planned collection system.
- Industrial. The relatively minor amounts of industrial wastes generated in Marin County will be handled and processed with the same options as for commercial and institutional sources, except for:
 - 1) That classified as "Group 1" (see above).
 - 2) That classified as "Agricultural" (see above).
 - 3) That classified as "Bulky Items" (see below).

It is anticipated that the growth rate of industrial waste with respect to other types will not change present practices during the planning period.

- Vehicle tires. Vehicle tires will be handled and disposed of within the framework of the planned system. Because of their potential high resource recovery value, however, and the difficulties they create at disposal sites, tires will receive special attention from the Solid Waste Management Committee. Tire reclamation technology will be monitored for systems applicable to Marin County.
- Bulky items. By definition, bulky items are difficult to collect, transfer, and dispose of in the normal operation of the solid waste system. Jurisdictions responsible for the collection, transfer, or disposal functions will establish bulk limitations which will provide maximum public accommodation without disruption of operations.

10.10 CONTINGENCY PLANS

10.10.1 DISASTERS

- Administration. In the event of a disaster such as atomic attack, invasion, earthquake, fire, or flood, the County Civil Defense or Disaster Plan may be invoked by State or Federal Authority, in which case all solid waste collection and disposal within the County will be under the direction of the Director of Public Works. In the event of localized disasters requiring contingency solid waste actions but not the invocation of the County Disaster Plan, responsible jurisdictions will continue as described in Section 10.2 above. In either case, responses to various situations will generally be similar, but each alternative must be evaluated on its merits by the responsible administrator, and appropriate action taken.
- Anticipated suspension of service. If closure of roads, availability of equipment, or other anticipated events will necessitate suspension of service, the following actions(s) will be considered:
 - 1) Disperse available drop boxes and containers throughout the affected communities for most convenient access by residential, commercial, and industrial sources.
 - 2) Where containers are not accessible, or of insufficient capacity, consider authorizing and directing the populace to burn combustibles and bury or compost putrescibles. These alternative actions will be taken only when consistent with the disaster situation, i.e., burning of refuse would not be appropriate in an extreme fire hazard.
 - 3) In the event disposal operations continue, consider encouraging or directing those to whom the disposal sites are accessible to take their wastes directly to the site. This course of action will be taken only if consistent with the disaster situation, i.e., a large flow of traffic to the site could create road congestion which would hamper other disaster operations.
 - 4) Restore normal collection and disposal service at the earliest opportunity consistent with public health and safety.
- Unanticipated suspension of service. The responses to "unanticipated suspension of service" will generally be the same as to "anticipated suspension of service", except that it may not be possible to disperse containers throughout the community.

- Limited service. Limited service, meaning less frequent service to all or portions of the County, would be imposed because of lack of manpower, equipment, accessibility, or other constraints. Curbside, as opposed to backyard pickup will be another form of limited service considered. Normal service will be restored at the earliest opportunity consistent with public health and safety.
- Partial service. Partial service, meaning the suspension of service to portions of the County, would be imposed because of lack of manpower, equipment, accessibility, or other constraint. Full normal service will be restored at the earliest opportunity consistent with public health and safety.
- Alternate equipment. In the event collection or disposal equipment is damaged, destroyed, inaccessible, or otherwise unavailable for operations, appropriate and available equipment from governmental or private sources will be utilized for equivalent operations. Acquisition of temporary equipment and restoration of normal service equipment will be accomplished through appropriate disaster relief or other sources available to the jurisdiction.
- Alternate manpower. In the event regular manpower is not available for collection and disposal operations, the responsible administrator will draw from supervisory, governmental, civil defense, or other appropriate manpower pools to provide the designated level of service.

10.10.2 LABOR DISPUTES

- Publicly operated systems. In the event a labor dispute interrupts a publicly operated system, collection and/or disposal equipment will be manned by supervisory or other available personnel to continue service. Limited or partial service will be considered as the proper response to some specific situations. If service cannot be maintained, responses described above for suspension of service in disaster situations will be considered.
- Franchised collection systems. Franchises will provide for takeover of franchised operations, including equipment, by the franchisor government in the event of inadequate service due to labor disputes or other causes. Equipment will be manned by governmental or other personnel as determined by the affected jurisdiction. If service cannot be maintained, responses described above for disasters will be considered.
- Disposal system. In the event of interruption of disposal operations due to labor disputes, equipment will be manned by County

or other available personnel. If full disposal operations cannot be maintained, consideration will be given to limited, partial, or suspended collection service. The County Director of Environmental Health will monitor affected disposal sites for hazards, and the degree of collection service will be adjusted accordingly by the responsible County or city official. If transfer stations are the only facilities affected, consideration will be given to direct haul by the collection compactor trucks to the disposal site.

10.10.3 FUEL SHORTAGE

In the event of a vehicle fuel shortage, consideration will be given to limited or suspended waste collection and disposal service, depending on the severity of the shortage. Under limited or suspended service condition, responses will be considered as for disasters, above. Use of private automobiles for waste disposal will be discouraged, and full utilization of the organized system, including existing transfer stations, will be encouraged.

10.10.4 EQUIPMENT OR PLANT BREAKDOWN

- Collection, transfer haul, or disposal equipment. In the event of massive breakdown of collection, transfer haul, or disposal equipment, not immediately repairable or replaceable from standby, equivalent replacements will be obtained by loan, lease, or purchase from governmental, commercial, or private sources. Full service will thereby be maintained or restored.
- Transfer plant. In the event a transfer station becomes inoperable and not immediately repairable, it will be bypassed by the collection vehicles until operation is restored. Haul will be direct to the landfill site. Consideration will be given to limited service because of the decreased availability of compactor trucks due to the longer haul.
- Processing plant. In the event a processing plant becomes inoperable and not immediately repairable, it will be bypassed until operation is restored. Compactor and transfer haul vehicles will travel directly to the operating face of the landfill.

10.11 FINANCING

10.11.1 CAPITAL EXPENDITURES

For general planning purposes, the estimated capital costs are detailed in Table 10 - 5. It is anticipated that these expenditures, all in the private sector, will be financed through traditional

TABLE 10-5 - IMPLEMENTATION SCHEDULE AND ESTIMATED CAPITAL COSTS

Fiscal Year(s)	Item	Description	Estimated Costs (Thousands of 1974 Dollars)	
			Total Private	FY Totals
1975 - 1976	1	Redwood Site Improvements	15	
	2	West Marin Site Improvements	13	65
1976 - 1977	3	Redwood Master Plan	20	
	4	Redwood Site Improvements	15	
	5	West Marin Site Improvements	13	85
1977 - 1978	6	Redwood Site Improvements	15	
	7	West Marin Site Improvements	13	65
1978 - 1979	8	Redwood Site Improvements	15	
	9	West Marin Site Improvements	13	
	10	Construction of San Rafael Transfer Station	670	733
1979 - 1980	11	Redwood Site Improvements	15	
	12	West Marin Site Improvements	13	
	13	Construction of San Rafael Transfer Station	670	733
1981 - 1990	14	Resource Recovery Feasibility Study	30	
	15	(No other capital expenditures anticipated; those for resource recovery are contingent upon results of feasibility study.)		
1991 - 2000	16	(No other capital expenditures anticipated; those for resource recovery are contingent upon results of feasibility study.)		

sources such as bank loans and leases, with repayment derived from user fees and other income sources. Capital expenditures for resource recovery beyond the short-term cannot be detailed without a feasibility study as specified in Subsections 10.3.5 and 10.7.1.

- Item 1. Redwood Site Improvements. It is assumed that an estimated total of \$75,000 for improvements detailed in Subsection 10.8.3 will be spread over a five year period, i.e., \$15,000 per year between fiscal years 1975 - 76 and 1979 - 80.
- Item 2. Improvements to West Marin Landfill. As in Item 1, it is assumed that the \$65,000 cost of improvements detailed in Subsection 10.8.4 will be spread over a five year period.
- Item 3. Redwood Master Plan. See Subsection 10.8.3.
- Item 4. Same as Item 1.
- Item 5. Same as Item 2.
- Item 6. Same as Item 1.
- Item 7. Same as Item 2.
- Item 8. Same as Item 1.
- Item 9. Same as Item 2.
- Item 10. It is anticipated that the transfer station construction will overlap two fiscal years. Therefore, half the total estimate of \$1,340,000 is shown for fiscal year 1978 - 79.
- Item 11. Same as Item 1.
- Item 12. Same as Item 2.
- Item 13. Same as Item 10.
- Item 14. The only capital expenditure anticipated in the medium-term planning period is a feasibility study for resource recovery facilities. The study will be financed from sources available to the private sector. No specific fiscal year is shown for this item in Table 10 - 5, since the study will be conducted at the discretion of the owner/operator (Subsection 10.3.5). Default by the private sector will necessitate funding by the County.
- Item 15. Medium-term. No specific capital expenditures are anticipated. If found to be feasible, funds for construction of re-

source recovery facilities will be from usual sources to the private sector.

- Item 16. Same as Item 15.
- County financing. In the event that governmental agencies need to finance construction of transfer stations and / or resource recovery facilities (Subsections 10.2.3, 10.2.5, 10.5.3) or operate collection services (Subsection 10.2.4) because the private sector cannot meet the requirements of the Plan, a financial analysis will be made as part of the design of the facility. Table 10-5 will then be revised accordingly.

10.11.2 OPERATING COSTS AND REVENUES

Public and private costs for administration and operation of facilities are shown in Table 10-6.

- Administration. County administration of the Plan is estimated to be \$20,000 annually. This amount includes that portion of the County Solid Waste Manager's salary charged to solid waste activities plus clerical assistance and overhead.
- Public education. As provided in Subsection 10.2.11, the annual cost of public information program as conducted by the Solid Waste Management Committee is estimated to be \$10,000.
- Collection. Collection services will be financed from service charges set according to specifications in Subsection 10.4.3, as well as any revenues from the Incentive Plan (see below). Collection service costs are not shown in Table 10-6.
- Transfer stations and disposal sites. The operating cost for privately operated facilities will be financed from user fees. The user fees will be established in accordance with provisions of Subsections 10.5.3 and Sections 10.6 and 10.8, and may be either tonnage rates, vehicle rates, percentage of collector's gross receipts, or combinations thereof. A comparison of costs of transfer and transfer haul to direct haul is shown in Table 10-7.
- Recycling and Incentive Plan. Recycling will be optionally performed at their own expense by certified recyclers, whether franchisees, recycle centers, or other authorized organizations. Certified recyclers will receive limited financial assistance from the County, based on the Incentive Plan (Subsection 10.3.6).

TABLE 10-6 - SCHEDULE OF OPERATING COSTS

Fiscal Year	C o s t s I n T h o u s a n d s o f 1 9 7 4 D o l l a r s					San Rafael Transfer Station(5)
	County Administration	Redwood Landfill(1)	West Marin Landfill(2)	West Contra Costa Landfill(3)	San Quentin Disposal Site(4)	
1975-76	\$ 30.0	\$ 408.7	\$ 26.5	\$ 99.2	\$ 223.5	-
1976-77	30.0	425.4	27.4	103.1	236.1	-
1977-78	30.0	442.4	28.2	107.1	248.7	-
1978-79	30.0	459.7	29.1	111.1	261.3	-
1979-80	30.0	477.3	29.9	115.1	274.2	\$ 602.8
1980-81	30.0	493.3	30.8	118.2	286.8	602.8
1981-82	30.0	509.6	31.6	121.3	299.4	602.8
1982-83	30.0	526.1	32.5	124.5	312.0	602.8
1983-84	30.0	739.2	33.4	220.7		818.9
1984-85	30.0	763.5	34.2	227.1		818.9
1985-86	30.0	788.1	35.1	233.7		818.9
1986-87	30.0	813.1	35.9	240.3		818.9
1987-88	30.0	838.5	36.8	247.0		818.9
1988-89	30.0	864.2	37.6	253.8		878.2
1989-90	30.0	890.4	38.5	260.7		878.2
1990-91	30.0	916.9	39.4	267.6		878.2
1991-92	30.0	943.7	40.2	274.7		
1992-93	30.0	971.0	41.1	281.8		878.2
1993-94	30.0	998.6	41.9	289.0		937.0
1994-95	30.0	1,026.6	42.8	296.3		937.0
1995-96 to 1999-2000	Transitional redirection period during which continuation of trends is anticipated.					

C L O S E D

NOTES TO TABLE 10-6

- (1) Based on \$2.50 per ton (the approximate charge to users) and tonnages in Table 10-3. It is assumed that this fee will cover operating costs plus amortized capital expenditures (Table 10-5 and Subsection 10.8.3).
- (2) Based on \$9.00 per ton (the approximate charge to users) and tonnages in Table 10-3. It is assumed that fee will cover operating costs and amortized capital expenditures (Table 10-5 and Subsection 10.8.4).
- (3) Based on \$2.75 per ton (the charge to Marin collection firms plus bridge tolls) and tonnages in Table 10-3.
- (4) Based on \$0.75 per loose cubic yard gate fee which, at 500 pounds per cubic yard, is \$3.00 per ton. It is assumed that this charge covers operating costs and any amortization of capital. Tonnages are from Table 10-3.
- (5) Total operating costs include both station operation and transfer haul, including turnaround (loading and unloading)
 - Haul. If haul plus turnaround time is 90 minutes or 1.5 hours (60 minutes round trip travel between San Rafael and Redwood Landfill plus 30 minutes load and unload time at each end of the trip), then each transfer vehicle makes 8 hours/day ÷ 1.5 hours/trip = (say) 5 trips per day, 20 tons per trip and 5 days per week or 260 days per year, each vehicle can haul 5 x 20 x 260 = 2,600 tons/year. At \$0.02 per ton-minute (total cost including operation, maintenance, amortization, etc.), annual costs per vehicle are

$$\frac{\$0.02}{\text{ton-minute}} \times 90 \text{ minutes} \times 26,000 \frac{\text{ton}}{\text{year}} = \$46,800$$

From waste flows in Table 10-3, the number of vehicles required can be obtained; annual costs can then be computed directly.

<u>Fiscal Years</u>	<u>No. of Vehicles</u>	<u>Annual Costs in \$1,000</u>
1980 - 83	5	\$ 234.0
1984 - 88	8	374.4
1989 - 93	9	421.2
1994 +	10	468.0

(The actual number of trucks and trailers purchased will be greater than shown above because of the need for spare equipment when other rigs are down for maintenance. This factor is reflected in the figure of \$0.02 per ton-minute.)

- Operating Costs. Station annual costs - including amortization, labor, equipment, supplies, taxes, profits, etc., are estimated as follows:

<u>Fiscal Year</u>	<u>Station Costs in \$1,000</u>
1980 - 83	\$ 368.8
1984 - 88	444.5
1989 - 93	457.0
1994 +	469.0

TABLE 10-7 - TRANSFER AND TRANSFER HAUL VERSUS DIRECT HAUL

<u>Fiscal Year</u>	<u>Annual Tonnage (1)</u>	<u>Annual Costs in Thousands of 1974 Dollars</u>		
		<u>Transfer and Transfer Haul (2)</u>	<u>Direct Haul (3)</u>	<u>Annual Saving, Transfer Over Direct Haul</u>
1979-80	107,204	\$ 602.8	\$ 1,045.2	\$ 442.4
1980-81	110,451	602.8	1,076.9	474.1
1981-82	113,743	602.8	1,106.4	503.6
1982-83	117,078	602.8	1,141.5	538.7
1983-84	181,281	818.9	1,767.5	948.6
1984-85	186,789	818.9	1,821.2	1,002.3
1985-86	192,371	818.9	1,875.6	1,056.7
1986-87	198,027	818.9	1,930.8	1,111.9
1987-88	203,757	818.9	1,986.6	1,167.7
1988-89	209,560	878.2	2,043.2	1,165.0
1989-90	215,438	878.2	2,100.5	1,222.3
1990-91	221,389	878.2	2,158.5	1,280.3
1991-92	227,414	878.2	2,217.3	1,339.1
1992-93	233,514	878.2	2,276.8	1,398.6
1993-94	239,687	937.0	2,336.9	1,399.9
1994-95	245,934	937.0	2,397.9	1,460.9
Total 1980-1995		\$ 12,770.7	\$ 29,285.8	\$ 16,512.1

(1) Table 10-3.

(2) Table 10-6.

(3) Computed at \$0.13 per ton-minute and 75 minutes round trip haul / turnaround (60 minutes travel, San Rafael to Redwood and return, plus 15 minute unload time), or $\$0.13 \times 75 = \$9.75/\text{ton}$.

Funds for the Incentive Plan will be appropriated from the County General Fund and then earmarked for a special "recycling fund". The annual amount of this appropriation will be determined by the Board of Supervisors so as to provide a support price for recycled materials. The support price will vary inversely with the success of the recycling program, approaching disposal cost in dollars per ton when the quantities are small, and reducing to a nominal amount as the quantity of reclaimed materials approaches or exceeds that requiring final disposal.

Actual costs are not shown in Table 10-6, but an example of the methodology is shown in Table 10-8. It is anticipated that the initial support price will be equal to the disposal costs at landfills of approximately \$2.50 per ton. In subsequent years, the support price will decrease in proportion to the amount of waste recycled as shown in Table 10-8. After fiscal year 1985 - 86, assuming the resource recovery facility begins operating, the price will drop sharply to reflect the larger quantities recycled mechanically as well as the anticipated decrease in source separation - recycle depot quantities.

10.11.3 ECONOMIC FEASIBILITY

It is a premise of the Plan that existing and planned disposal sites, transfer stations, and resource recovery facilities will be activated, operated, and maintained as viable business investments by the private sector (Subsections 10.6.1, 10.7.1). If not, subject to the review and recommendation of the Solid Waste Management Committee and the discretion of the Board of Supervisors, the County will take appropriate action as provided herein.

10.11.4 SPECIAL WASTES

- Group 1 wastes. Because of the small quantities of toxic and hazardous wastes generated within Marin, no currently identifiable financing requirements for disposal of these wastes are anticipated. If, in the judgement of the Committee, Group 1 waste is not being handled in a satisfactory manner and if private industry cannot make suitable arrangements, the Committee will consider financing for whatever means are appropriate to remedy the situation.
- Abandoned vehicles. The Abandoned Vehicle Abatement (AVA) Program will continue to be funded from the State Abandoned Vehicle Trust Fund and / or assessments against vehicle or property owners by responsible local agencies.

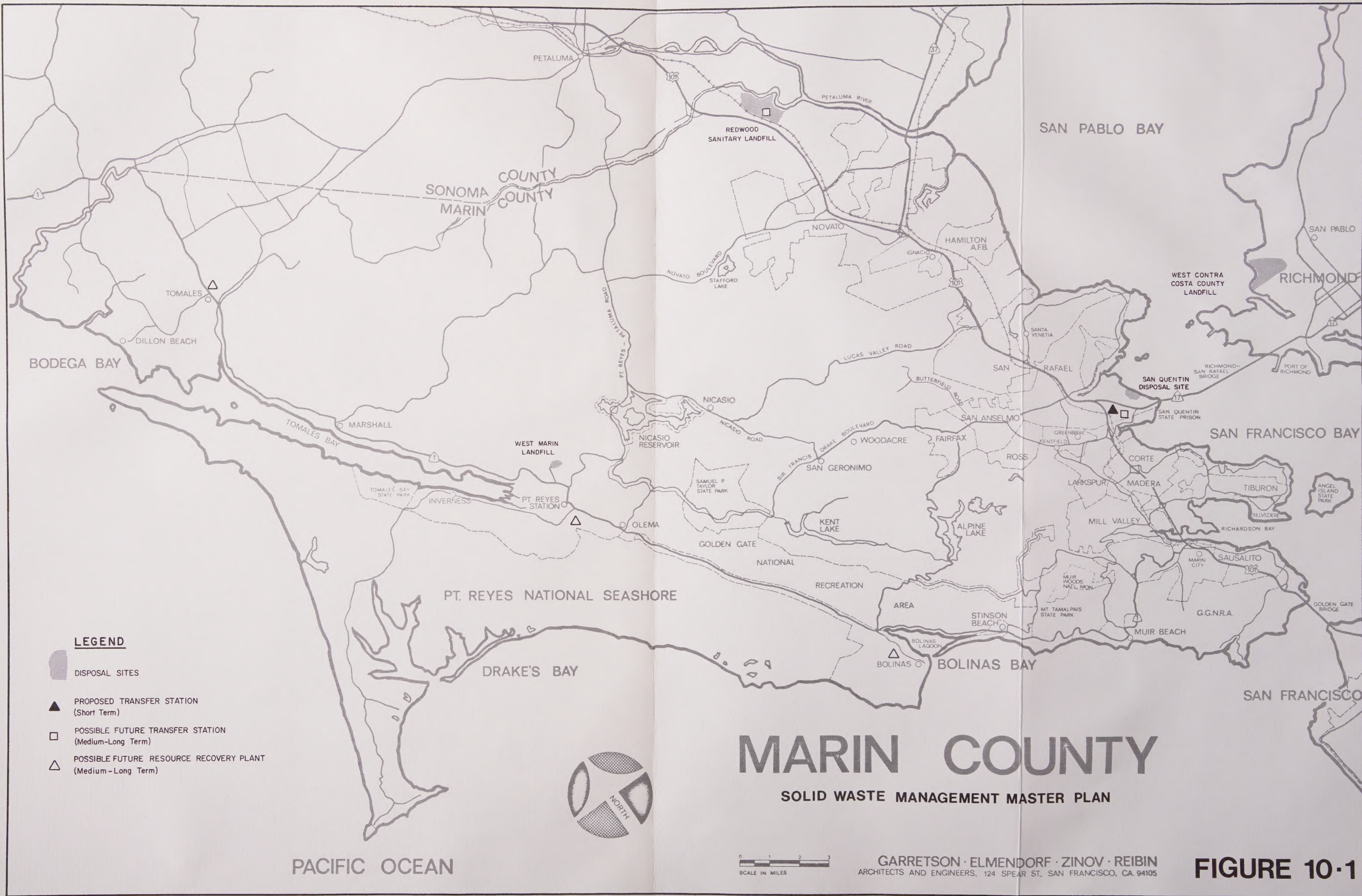
TABLE 10-8 - ANNUAL COSTS - RESOURCE RECOVERY INCENTIVE PLAN

Fiscal Year	Solid Waste Quantities, 1,000 Tons				Estimated Costs	
	Reduced Consumption Total	Waste Recycled (1)			Support Price \$ / Ton	Support Amount (2)
		Source Separation, Recycle Depots, Etc.	Resource Recovery Facility	Total		
1975-76	274.1	6.9	-	6.9	\$ 2.50	\$ 17,200
1976-77	279.9	9.6	-	9.6	2.40	23,000
1977-78	285.6	12.4	-	12.4	2.30	28,500
1978-79	291.4	15.1	-	15.1	2.20	33,200
1979-80	297.2	17.8	-	17.8	2.10	37,400
1980-81	301.7	20.3	-	20.3	2.00	40,600
1981-82	306.3	22.7	-	22.7	1.90	43,100
1982-83	310.9	25.1	-	25.1	1.80	45,200
1983-84	315.4	27.6	-	27.6	1.70	46,900
1984-85	320.0	30.0	-	30.0	1.60	48,000
1985-86	324.6	32.5	-	32.5	1.50	48,800
1986-87	329.2	31.0	208.7	239.7	0.25	59,900
1987-88	333.7	29.5	215.8	245.3	0.24	58,900
1988-89	338.3	28.0	223.0	251.0	0.23	57,700
1989-90	342.9	26.5	230.1	256.6	0.22	56,500
1990-91	347.4	25.0	237.3	262.3	0.21	55,100
1991-92	352.0	23.5	244.4	267.9	0.20	53,600
1992-93	356.6	22.0	251.6	273.6	0.19	52,000
1993-94	361.2	20.6	258.7	279.3	0.18	50,300
1994-95	365.7	19.1	265.9	285.0	0.17	48,500
1995-96	370.3	17.6	273.0	290.6	0.16	46,500
1996-97	374.9	16.1	280.2	296.3	0.15	44,400
1997-98	379.4	14.6	287.3	301.9	0.14	42,300
1998-99	384.0	13.1	294.4	307.5	0.13	40,000
1999-2000	388.6	11.6	301.6	313.2	0.12	37,600

(1) Table 10-2.

(2) Rounded to the nearest \$100.

- Agricultural wastes. Principal responsibility for disposal of dairy manure remains with the dairy industry itself. The County will continue to offer financial assistance at its discretion to dairies to meet state water quality discharge requirements. The County will also consider other ways to assist dairies in utilizing disposal methods suggested in Subsection 10.9.3 such as: (1) demonstration grants (local, state or federal) for pilot projects; (2) funding from the Incentive Plan (Subsections 10.3.6 and 10.11.2). Amount of County funding, if required, will depend on the extent to which dairies are able to meet water quality discharge standards. If, in the judgement of the Committee, agricultural wastes are not being handled in a satisfactory manner, the County will consider financing the appropriate steps to remedy the situation.
- Sewage sludge. Since the disposal of sewage sludge with Group 2 wastes is restricted by the Regional Water Quality Control Board (RWQCB), some improvements may be necessary at the Redwood Landfill. The nature of these improvements is subject to discharge requirements of the RWQCB. It is anticipated that funding will be through the owner / operator's user fees. Similarly, agencies responsible for sewage treatment will continue to finance disposal of sludge through taxes or assessments.
- Septic tank pumpings. The only anticipated expenditures for septic tank pumpings disposal are as follows:
 - 1) Special apparatus required for septic tank pumpings in any newly constructed sewage treatment plants in West Marin will be considered. If required, it will be part of the cost (construction and maintenance) of the plant and financed in the same way as the plant.
 - 2) Any improvements at the Borello Ranch done pursuant to WQCB discharge requirements will be financed through user fees thereat.
- Water treatment sludge. Disposal of water treatment sludge will continue to be financed as part of the respective agencies' operating costs. No identifiable funding is anticipated, except if a new landfill site to replace Marin Municipal Water District's Kent Lake site is required.
- Litter, recreational waste, street sweepings. Litter pickup and street sweeping will continue to be financed from general funds of respective government agencies listed in Subsection 10.9.7.
- Group 3 wastes. Group 3 waste disposal will be handled in the same manner as Group 2 (domestic and commercial) solid wastes. No separately identifiable funding is anticipated.



U.C. BERKELEY LIBRARIES



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